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CORRECTIONS AND ADDITIONS TO THE POLYPORES OF TEMPERATE NORTH AMERICA

WILLIAM A. MURRILL

During the dozen years or more that have elapsed since the publication of the two parts of *North American Flora* dealing with polypores, much additional information has been gained that is of value in determining the limitations and distribution of species, as well as the history and nomenclature of type collections. This knowledge has come to me through recent American collections in widely separated regions; through more and better specimens obtained from Europe; and through the increased knowledge and more enlightened opinions of other students of the family.

When I undertook the study of polypores, at the suggestion of Dr. Underwood, American collections were in very bad shape, and I afterwards found that European collections were not much better. This was particularly true of American specimens in European herbaria, because few foreign workers took any special interest in them, and they were incorrectly determined and carelessly handled. Through the valued assistance of American and European mycologists, our knowledge of these plants in America is now fairly accurate and complete, so far as the pileate forms are concerned, and I hope that the same may soon be said of the resupinate species.

The notes I have to make at this time deal largely with the nomenclature of temperate species already recognized, and with the addition of new species to our flora. The former will be taken up in the order in which they appear in *North American Flora*; while the latter will be appended in an alphabetical list of species, regardless of generic or other grouping.

HYDNOPORIA FUSCESCENS (Schw.) Murrill

Change to *Hydnochaete olivacea* (Schw.) Banker, as published in *Mycologia* 6: 234. 1914. This species remains in the Polyporaceae.

FOMITIPORIA DRYOPHILA Murrill

Probably not distinct from *Pyropolyporus Calkinsii* Murrill.

CORIOLUS HIRSUTULUS (Schw.) Murrill.

Only a form of *Coriolus versicolor* (L.) Quél.

CORIOLUS PUBESCENS (Schum.) Murrill

Add to synonymy *P. Grayii* Cooke.

CORIOLUS BALSAMEUS (Peck) Murrill

This species has been recombined as *Tyromyces balsameus* (Peck) Murrill.

CORIOLUS LLOYDII Murrill

This may be only a form of the variable *Coriolus pubescens* (Schum.) Murrill.

CORIOLUS PINSITUS (Fries) Pat.

Add to synonymy *Boletus villosus* Sw. Prodr. 148. 1788. Not *B. villosus* Huds.

CORIOLUS BIFORMIS Murrill

Polyporus biformis Klotzsch having been wrongly interpreted, *Coriolus molliusculus* (Berk.) Murrill was adopted in "Northern Polypores" for this species. According to Bresadola, who has sent me excellent specimens to support his opinion, *Trametes populina* (Schulz.) Bres. is not distinct from *C. molliusculus*. If true, then his name would have priority unless the doubtful *Boletus cervinus* Schw. could be shown to be the same thing.

CORIOLUS PROLIFICANS (Fries) Murrill

Change to *Coriolus biformis* (Klotzsch) Pat. (*Polyporus biformis* Klotzsch, *Linnaea* 8: 486. 1833).

CORIOLELLUS SEPIUM (Berk.) Murrill

Add to synonymy *Trametes minima*, a manuscript name of Berkeley's recently published for the small, undeveloped form so common on oak, chestnut, etc.

TYROMYCES GUTTULATUS (Peck) Murrill

According to Bresadola, this is not distinct from *Polyporus alutaceus* Fries.

TYROMYCES SMALLII Murrill

Polyporus pini-ponderosae Long, recently described from New Mexico, does not appear to be distinct.

TYROMYCES TILIOPHILA Murrill

Although of large size and found on hardwood, this species should be carefully compared with *T. guttulatus* (Peck) Murrill and *Polyporus alutaceus* Fries.

TYROMYCES CRISPELLUS (Peck) Murrill

A synonym of *T. balsameus* (Peck) Murrill, as stated in Jour. N. Y. Bot. Gard. 13: 177. 1912.

SPONGIPELLIS GALACTINUS (Berk.) Pat.

I have seen no specimens from America that correspond to *Spongipellis spumeus* of Europe. *Trametes malicola* Berk. & Curt. is said to be distinct from *S. galactinus*, under which I doubtfully placed it as a synonym.

BJERKANDERA PUBERULA (Berk. & Curt.) Murrill

Not sufficiently distinct from *B. fumosa* (Pers.) P. Karst.

HEXAGONA ALVEOLARIS (DC.) Murrill

Add to synonymy *Favolus Kauffmanii* and *Favolus Whetstoneae*, both published by Lloyd in Myc. Notes 44: 1916.

HEXAGONA STRIATULA (Ellis & Ev.) Murrill

This may be only a variety of *H. alveolaris* (DC.) Murrill.

MICROPORELLUS DEALBUTUS (Berk. & Curt.) Murrill

I found a plant in North Carolina and I also have one from Auburn, Alabama, collected by Earle and Baker, which appear to be quite distinct from the one usually called *M. dealbata*. It is claimed that there has been some mistake at Kew and that this thicker plant, often with central stipe, should be called *Polyporus dealbatus* and the more common one *P. mutabilis*. If this is true, it would necessitate not only a change of name but also a change in my generic treatment.

POLYPORUS CRATERELLUS Berk. & Curt.

It is probable that *P. cyathiformis* Lév. is not distinct. If so, this name should be taken up. *P. confusus* Massee is a closely related species recently described from Louisiana.

POLYPORUS COLUMBIENSIS Berk.

This species occurs in Oregon rather than in South Carolina.

POLYPORUS HUMILIS Peck

Compare *Polyporus fractipes* Berk. & Curt.

POLYPORUS ARCULARIFORMIS Murrill

Only a small form of *P. arcularius* (Batsch) Fries.

POLYPORUS AMYGDALINUS Berk. & Rav.

An excellent specimen of this rather imperfectly known species was recently sent in from Montgomery, Alabama, by Dr. R. P. Burke. See list of additions.

SCUTIGER RETIPES (Underw.) Murrill

Apparently not distinct from specimens of *Polyporus pes-caprae* collected by Bresadola in Italy. It is reported from New Jersey and North Carolina, as well as from Alabama.

SCUTIGER HOLOCYANEUS (Atk.) Murrill

This can hardly be distinct from *S. caeruleoporus* (Peck) Murrill, although I have never been able to compare the types.

SCUTIGER RADICATUS (Schw.) Murrill

See "Western Polypores" for a descriptive account of *Scutiger hispidellus* (Peck) Murrill, which is distinct from *Scutiger radicans*. It is claimed that *P. Kansensis* is also distinct, on the ground that it is different in habit and also has different spores.

SCUTIGER PERSICINUS (Berk. & Curt.) Murrill

Compare "Southern Polypores" for notes on a recent collection of this species.

SCUTIGER WHITEAE Murrill

This is the representative of *Polyporus confluens* (Alb. & Schw.) Fries in America. It is pale-colored when fresh, resembling *P. ovinus*, but turns reddish instead of gray in the herbarium. I have it from Tolland, Colorado; Banff, Canada; and Hague, New York; as well as from Maine.

GRIFOLA PORIPES (Fries) Murrill

Change to *Grifola cristata* (Schaeff.) S. F. Gray. Several collections received from Europe show that the American plant is not distinct. It was first described and figured by Schaeffer (Fung. Bavar. Ind. 81. pl. 113. 1774) under the name of *Boletus flabelliformis*, which he later changed to *Boletus cristatus* (Fung. Bavar. Ind. 93. pl. 316, 317. 1774). *Boletus flabelliformis* was used by Scopoli in 1770 for a different plant.

GRIFOLA SUMSTINEI Murrill

Change to ***Grifola mesenterica*** (Schaeff.) Murrill. Originally described as *Boletus mesentericus* by Schaeffer (Fung. Bavar. Ind. 91. pl. 267. 1774) and renamed *Boletus giganteus* by Persoon.

GRIFOLA FRONDOSA (Dicks.) S. F. Gray

Some claim that *Polyporus intybaceus* is distinct. Practically all the specimens so labeled, however, are *G. frondosa*.

GRIFOLA BERKELEYI (Fries) Murrill

Strange as it may seem, this oak-loving species grows on conifers in the west, attacking the roots of *Abies* and even occurring on dead fir wood. Dr. Weir has sent me specimens from Idaho and I have recently received a collection from Corvallis, Oregon, found by Mr. C. E. Owens at the base of a living *Abies grandis* on October 28. The surface of the western specimens is quite reticulate, but they do not appear to be specifically distinct.

GRIFOLA FRACTIPES (Berk. & Curt.) Murrill

This was changed to *Grifola Peckiana* (Cooke) Murrill in "Northern Polypores." *Polyporus fractipes* Berk. & Curt., described from South Carolina, appears to be a different thing, closely related to *P. humilis* Peck.

AURANTIPORUS PILOTAE (Schw.) Murrill

Change to **Aurantiporus croceus** (Pers.) Murrill (*Polyporus croceus* Pers. Obs. Myc. 1: 87. 1796). *Polyporus Pini-canadensis* Schw. can hardly be a synonym of this species.

LAETIPORUS SPECIOSUS (Batt.) Murrill

Change to **Laetiporus sulphureus** (Bull.) Murrill (*Boletus sulphureus* Bull. Herb. Fr. pl. 429. 1788). It has been decided that Battarra was a non-binomial author, although some of his names happened to be binomial in form.

FUNALIA VILLOSA (Sw.) Murrill

Change to *Funalia versatilis* (Berk.) Murrill. *Boletus villosus* Sw. is *Coriolus pinsitus* (Fries) Pat., but Swartz's name cannot be used because *B. villosus* Huds. is prior.

FUNALIA STUPPEA (Berk.) Murrill

According to specimens from Bresadola, *Trametes hispida* Bagl. and *Trametes Trogii subresupinata* are not distinct. According to Maire, the name *Trametes extenuata* (Mont.) Pat. is to be preferred. Roumeguère calls the same plant *Trametes hexagonoides* Fries.

HAPALOPILUS SUBLILACINUS (Ellis & Ev.) Murrill

Apparently not distinct from *Hapalopilus gilvus* (Schw.) Murrill.

HAPALOPILUS GILVUS (Schw.) Murrill

Polyporus Hookerii, a manuscript name of Berkeley's recently published, is synonymous. *Polyporus calvescens* Berk. is not a synonym. *Trametes Petersii* Berk. & Curt. is also very probably distinct.

INONOTUS HIRSUTUS (Scop.) Murrill

Polyporus Bankeri C. G. Lloyd is not distinct, according to Lloyd.

INONOTUS DRYOPHILUS (Berk.) Murrill

Said to be the same as *Polyporus rheades* Pers. (Myc. Eur. 2: 69. 1825), found on trunks in France, and synonymous with or very closely related to *Polyporus coruscans* Fries and other European species.

INONOTUS PERPLEXUS (Peck) Murrill

Change to *Inonotus cuticularis* (Bull.) P. Karst. (*Boletus cuticularis* Bull. Herb. Fr. pl. 462. 1789).

INONOTUS AMPECTENS Murrill

If the type of *Inonotus fruticum* (Berk. & Curt.) Murrill was collected on *Asimina*, then *I. ampectens* is probably not distinct from it.

INONOTUS RADIATUS (Sow.) P. Karst.

Polyporus glomeratus Peck is a distinct species.

COLTRICIA PERENNIS (L.) Murrill

Polyporus prolificans C. G. Lloyd is said to be a synonym.

COLTRICIA TOMENTOSA (Fries) Murrill

Regarding *Polyporus dualis*, Peck published the following:

"In Sylloge, Vol. vi, p. 208, this fungus has been united with *P. circinatus*, to which it is similar in color and texture, but from which it differs in its shape and habitat. It is dimidiate and stemless, or with only a lateral short stem-like base, and grows from the sides of stumps or dead trunks of spruce or pine trees. The dried specimens are also a little more highly colored than those of *P. circinatus*. It does not seem right to disregard entirely such differences, and I am unwilling to follow the plan of Sylloge in considering this plant identical with *P. circinatus*. It is at least worthy of varietal distinction, and may stand under the name *P. circinatus* Fr. var. *dualis* Pk."

COLTRICIA OBESA (Ellis & Ev.) Murrill

Change to **Coltricia Montagnei** (Fries) Murrill (*Polyporus Montagnei* Fries; Mont. Ann. Sci. Nat. II. 5: 341. 1836).

CRYPTOPORUS VOLVATUS (Peck) Shear

In my "Northern Polypores" and "Western Polypores," Hubbard instead of Shear was incorrectly cited as the authority both for the generic name and the specific combination.

FOMES ROSEUS (Alb. & Schw.) Cooke

It is claimed by some that the plant called *Polyporus carneus* in this country is distinct, being thin and annual, while the true *Fomes roseus* is ungulate. Compare variations occurring in *Porodaedalea Pini* (Thore) Murrill.

PYROPOLYPORUS Murrill

Species of this genus having ferruginous or fulvous spores were transferred to the new genus, *Fulvifomes* Murrill, in "Northern Polypores," "Southern Polypores," "Western Polypores," and "Tropical Polypores."

PYROPOLYPORUS BAKERI Murrill

Specimens of *Fomes Hartigii* from Bresadola appear very similar on first sight, but are probably distinct. Compare also *Fomes robustus*.

PYROPOLYPORUS PRAERIMOSUS Murrill

Not specifically distinct from *Fulvifomes Everhartii* (Ellis & Gall.) Murrill.

PYROPOLYPORUS JUNIPERINUS (Schrenk) Murrill

Fomes Demidoffii is said to be the same thing. If so, this name will have to be taken up, since it is much older. According to Saccardo, *Fomes Demidoffii* Lév. occurs "ad truncos Juniperi excelsae in Europa et Pini silvestris pr. Minussink Sibiriae Asia-ticae." The description agrees fairly well with that of *P. juniperinus*.

PYROPOLYPORUS EARLEI Murrill

Not specifically distinct from *Fulvifomes juniperinus* (Schrenk) Murrill.

GLOBIFOMES GRAVEOLENS (Schw.) Murrill

Polyporus botryoides Lév. is probably not distinct.

ELFVINGIA P. Karst.

Species having hyaline or subhyaline spores were transferred to the new genus, *Elfvingiella* Murrill, in "Northern Polypores," "Southern Polypores," "Western Polypores," and "Tropical Polypores."

ELFVINGIA FASCIATA (Sw.) Murrill

The validity of the specific name is in doubt and it may be advisable to use the combination *Elfvingiella marmorata* (Berk. & Curt.) Murrill for this species.

ELFVINGIA MEGALOMA (Lév.) Murrill

Many authors prefer *Fomes applanatus* for this species, claiming that there is no specific difference between the American and European plants. The earliest name for *Fomes applanatus* is *Boletus lipsiensis* Batsch, 1786, and this was taken up in 1903 as *Elfvingia lipsiensis* (Batsch) Murrill.

GANODERMA SESSILE Murrill

The type of this species is large and entirely sessile, but a great many forms have been collected since it was described that are furnished with long stipes and seem to connect it up with *Polyporus lucidus* of Europe (*Ganoderma pseudoboletus* (Jacq.) Murrill). According to some authors, *Ganoderma subperforatum* Atk. is not distinct. The genus is a very difficult one and still requires considerable field work before the limitations of the species are accurately known.

DAEDALEA AESCULI (Schw.) Murrill

Use the name *Daedalea ambigua* Berk. for this species.

GLOEOPHYLLUM HIRSUTUM (Schaeff.) Murrill

Overholts includes *Trametes protracta* Fries as an American species, but says that some consider it only a poroid form of *G. hirsutum*, which it much resembles.

LIST OF ADDITIONS

ABRAMSIANUS. *Pyropolyporus Abramsianus* Murrill, Western Polypores 26. 1915. Collected several times in California.

ADUNCUS. *Polyporus aduncus* C. G. Lloyd, Letter No. 56: 5; Syn. Apus Pol. 354. 1915. Type not seen. Belongs in *Inonotus*.

"Pileus dimidiate, 1 cm. thick, unicolorous brown. Surface with coarse, brown, hispid hairs. Context brown. Pores small, round, brown. Setae few, large, 8-10 × 60-75 μ , deeply colored, with peculiar, hooked points. Spores hyaline, smooth, 4 × 5-6 μ , not guttulate. Spores are a little larger than *Polyporus leporinus*, but otherwise it is exactly the same, excepting the surface, which is quite different. It is very rare, only known from one specimen from E. K. Abbott, Monterey, California, and grew on the roots of a pine tree. To the eye it resembles *Polyporus cuticularis*, but has no relation to it otherwise."

AMARUS. *Fomes amarus* (Hedgcock) Murrill, Western Polypores 25. 1915. Found on incense cedar in Oregon and California.

AMORPHUS. *Tyromyces amorphus* (Fries) Murrill, Mycologia 10: 109. pl. 6, f. 5. 1918. Rare on conifers in northern regions.

AMYGDALINUS. *Polyporus amygdalinus* Berk. & Rav.; Berk. Grevillea 1: 49. 1872. Described from South Carolina, on oak, and poorly represented until Dr. R. P. Burke recently sent me splendid specimens from Alabama. They suggest *Laetiporus sulphureus*, but are not brilliantly colored and the context is very soft corky instead of rigid when dry.

ARCTOSTAPHYLI. *Fomes Arctostaphyli* Long. Compare depauperate forms of *Pyropolyporus igniarius*.

AURICULATUS. *Pseudofavolus auriculatus* Pat. Bull. Soc. Myc. Fr. 24: 4. 1908. Described from Louisiana and said to resemble *Hexagona cucullata* (Mont.) Murrill.

BOREALIS. *Fomes borealis* C. G. Floyd, Syn. Fomes 247. 1915. Type not seen. Apparently a species of *Pyropolyporus*.

"Pileus unguulate, with a thin, pale, smooth, hard crust, variegated with darker spots. Context hard, dark brown (amber brown). Setae slender, numerous, dense. Spores hyaline, globose, 6 μ .

"I found this on the birch at Temagami, Ontario. It is closely related to *igniarius* and *nigricans*. The marked feature is the dense setae on the hymenium."

BROWNII. *Elfvingia Brownii* Murrill, Western Polypores 29. 1915. Found in California.

CAESIOSIMULANS. *Tyromyces caesiosimulans* Atk. Ann. Myc. 6: 61. 1908. Said to be near *T. caesius*, but to have globose, pedicellate spores.

CALVESCENS. *Polyporus calvescens* Berk. Ann. Nat. Hist. 3: 390. 1839. Described from New Orleans, Louisiana, and not since collected.

CARBONARIUS. See *Tyromyces carbonarius* Murrill in Western Polypores, p. 8.

CONFLUENS. *Polyporus confluens* (Alb. & Schw.) Fries. I have examined many specimens in herbaria and have studied fresh plants with Bresadola at Mendel Pass, but nothing I have seen from America seems to match it. It is pale-red at first, becoming almost as brilliantly colored as *Hypomyces lactifluorum*. Mr. Lloyd reports having seen a specimen from Massachusetts collected by Mrs. Blackford.

CONFUSUS. *Polyporus confusus* Mass. Kew Bull. 1910: 250. 1910. Described from Louisiana. See "Southern Polypores," p. 22. Closely related to *Polyporus cyathiformis* Lév.

CONGLOMERUS. *Polystictus conglomerus* C. G. Lloyd, Myc. Notes 50: 706. f. 1056. 1917. Type not seen, but doubtless belongs in *Coriolus*.

"Pileus thin, rigid, developed from a hard, white, conglomerate, myceloid base. Surface unicolorous, between isabelline and honey yellow, velvety with soft hairs, faintly zoned. Pores minute, rigid, alutaceous. Spores 3×5 , hyaline.

"The feature of this plant is the method of development from a conglomerate base, unknown to me in any other species. The rigid pileus and pores point to *Trametes*, but it is customary to refer such thin plants to *Polystictus*. In grouping it we would put the species in the same section as *versicolor*. The specimens were sent to Mr. Plitt by Dr. H. E. Hone from California."

CUTIFRACTUS. See *Tyromyces cutifractus* Murrill in Western Polypores, p. 7.

CYLINDRISPORA. *Poria* (or *Fomes*) *cylindrispora* C. G. Lloyd, Letter 65: 9. March, 1917. *Fomitiporia cylindrispora* (Lloyd) Murrill. Type not seen. Described from Weir's collection in Montana.

"Perennial, resupinate, $\frac{1}{2}$ -1 inch thick. Context ferruginous (about snuff brown Ridgway). Pores minute, with silvery glancing mouths. Pore layer narrow, 2-3 mm. wide. Setae abundant, slender, not inflated at base. Spores hyaline, cylindrical, $2\frac{1}{2}$ -3 \times 6-7, smooth.

"Mr. Weir finds this abundant on *Quercus Garryana*. To the eye it is same as the common *Poria punctata* (*Poria obliqua* of American traditions, not Europe), but no other known similar species has cylindrical spores."

EPILEUCUS. Not American, so far as I know.

FARLOWII. *Polyporus Farlowii* C. G. Lloyd, Syn. Apus Pol. 363. f. 697. 1915. Type not seen. Apparently belongs in *Inonotus*.

"Pileus applanate, wavy. Surface strongly hispid, with suberect, brown hairs. Context hard, ferruginous, brown (antique brown), fibrillose. Pores small, round, firm, concolorous. Setae abundant, straight, projecting 30 μ . Spores colored, elliptical, $2\frac{1}{2} \times 4\frac{1}{2}$ -5.

"The type at Kew was collected in Arizona and, according to the label, sent by Farlow to Cooke, who determined it as *Polyporus endocrocinus*. The yellow coloring matter is not soluble in water, but readily so in a potash solution. This must be an unusual species in our Western States. It has never reached us, nor is it found at New York."

FLORIFORMIS. Reported from America, but I have seen no American specimens that match those from Europe.

FRACTIPES. *Polyporus fractipes* Berk. & Curt. Grevillea 1: 38. 1872. Collected a few times in South Carolina and Louisiana. *Polyporus humilis* Peck is closely related.

FRAGILIS. *Spongipellis fragilis* (Fries) Murrill, Southern Polypores 61. 1915. I have European specimens from Bresadola and Karsten and American specimens collected by Atkinson at Ithaca and in North Carolina, and by myself at Ohio Pyle, Pennsylvania, and at Lake Placid, New York. Fungi Columb. 4749, collected at London, Canada, by Dearness, and distributed as *P. mollis* (Pers.) Fries is not distinct. Peck got it at Pine Hill, New York, and called it *P. Weinmanni* Fries. Compare Fries Icon. pl. 182, f. 2. My *Spongipellis sensibilis*, from the West, is closely related.

FUMIDICEPS. *Tyromyces fumidiceps* Atk. Ann. Myc. 6: 61. 1908. Said to be near *T. chioneus*, but to have a darkened pileus and very different spores.

GILVOIDES. *Trametes gilvoides* C. G. Lloyd, Myc. Notes 38: 520. f. 516. 1912. Collected by Lloyd on an oak branch in Florida in January, 1897, and never seen elsewhere by him. I have not seen the type, but it apparently belongs to *Pogonomyces*.

"Entire plant gilvous brown, pileus subresupinate, adnate, the surface of the pileus covered with rigid, brown setae in the same manner as those of *Trametes hydnoides*. Context gilvous brown. Hymenium with numerous slender setae of the "Hymenochaete" type. Pores small, round, with glancing mouths. Spores globose, $2\frac{1}{2} \times 3 \mu$, hyaline (or perhaps pale colored)."

GLOMERATUS. *Polyporus glomeratus* Peck, Ann. Rep. N. Y. State Mus. 24: 78. 1873. **Inonotus glomeratus** (Peck) Murrill. Distinguished from *Inonotus radiatus* by its more resupinate habit and peculiar cystidia.

GRANTII. *Polyporus Grantii* C. G. Lloyd, Myc. Notes 53: 763. f. 1147. 1918. Type not seen.

"White, spatulate to a rooting base. Surface smooth, apparently a little glutinose when fresh. Context white, hard. Pores minute, white. Spores (if correctly seen) globose, 6-7 mic., minutely rough.

"Based on a single half specimen (62) from J. M. Grant, Washington. It grew on a log. At first I thought it was *Polyporus osseus*, one of our rare

species, which with us is usually greyish, but in Europe is white, but the spores of the two species are entirely different, if I see them correctly. The habitat also differs. When fresh the plant was probably slightly viscid as *Abies* needles are adherent to the surface."

HETEROMORPHA. *Daedalea heteromorpha* Fries, Obs. Myc. 1: 108. 1815. Overholts thinks we have this or a closely related species in America. He cites a specimen from Idaho with hymenium partly lamellate and partly poroid and spores cylindric, hyaline, $9-11 \times 3-4 \mu$. Lloyd in Myc. Notes. 59, 1919, gives several figures of this plant, practically all of which show large, irregular pores like those of *Coriolellus sepium*, to which species I have been referring the above forms. According to Lloyd, his *Trametes lacerata* and *Coriolellus sepium* are both practically the same as *Daedalea heteromorpha*.

HISPIDELLUS. *Scutigera hispidellus* (Peck) Murrill, Western Polypores 16. 1915. It is quite distinct from *Scutigera radicata* (Schw.) Murrill. I have recently received excellent specimens from the state of Washington. According to Lloyd, the species is not distinct from *Polyporus hirtus* Quél. of Europe. In support of his opinion, I find the dried specimens bitter, as described by Quélet; and it has been my experience that species occurring both in the northeastern United States and in the extreme Northwest are rather apt to be found also in Europe and around the world in northern regions. This distribution, of course, dates back to land connections and a different climate.

KREKEI. *Trametes Krekei* C. G. Lloyd, Letter No. 69: 12. 1919. Type not seen. Compare *Coriolellus serialis* and *Trametes Morganii*.

"Pileate with narrow pileate development, but very long, decurrent pores. Color pale reddish. Pores large, angular. Spores abundant, globose, $6 \times 7 \mu$.

"The receipt of this fine specimen which was unfamiliar to me led to the study of the unnamed *Trametes* that have accumulated and the publication of *Trametes Morganii*. It is very similar to *Morganii* to the eye (but not the same), but the spores are entirely different. Rev. Kreke collected it in Franklin County, Indiana, and it must be rare, for I have no other specimen."

LEEI. *Inonotus Leei* Murrill, Western Polypores 21. 1915. Found on oak in California.

- LUDOVICIANUS. *Inonotus ludovicianus* (Pat.) Murrill, Southern Polypores 41. 1915. On oak wood in South Carolina and Louisiana. It is a near relative of *Inonotus cuticularis*.
- MALICOLA. *Trametes malicola* Berk. & Curt. Jour. Acad. Phila. II. 3: 209. 1856. **Coriolellus malicola** (Berk. & Curt.) Murrill. There are many dried specimens of this plant in the Garden herbarium which have seemed to connect up rather closely with small-pored forms of *Coriolellus sepium*. At Yama Farms, November 8, 1919, I collected several fresh specimens on apple-tree logs.
- McMURPHYI. *Polyporus McMurphyi* Murrill, Western Polypores 12. 1915. Found in California.
- MERISMA. *Trametes merisma* Peck, Bull. N. Y. State Mus. 139: 31. 1910. Pendant from fallen beech trunks.
- MORGANII. *Trametes Morganii* C. G. Lloyd, Letter No. 69: 15. 1919. This plant was incorrectly called *Trametes rigida* by Morgan. I have specimens of it, to which I several years ago assigned a manuscript name but never published it because it seemed to me too near to *Coriolellus serialis*. According to Lloyd, who describes it at length in the letter cited above, the same thing occurs under other names in Europe, where it is spore-bearing and always resupinate. He objects to Romell's name, *Polyporus albocarneogilvidus*, as being too long,—and one can hardly blame him.
- OREGONENSIS. See *Scutiger oregonensis* Murrill in Western Polypores, p. 15.
- OSSEUS. *Polyporus osseus* Kalchb. Enum 1, p. 160. Occasional northward. See "Western Polypores," p. 13.
- OVINUS. *Polyporus ovinus* (Schaeff.) Fries. **Scutiger ovinus** (Schaeff.) Murrill. I have two American collections which I have referred to this species, one from Alabama sent by Dr. Burke, and one made by myself on a shady bank in coniferous woods at Camp Kanosa in the Adirondacks. The latter specimens were white beneath and pale-rosy-isabelline above, becoming rather gray in the herbarium and resembling *Scutiger griseus* (Peck) Murrill. *Scutiger Whiteae* Murrill is nearer *P. confluens*.

PENNSYLVANICUS. *Polyporus pennsylvanicus* Sumstine, Jour. Myc. 13: 137. 1907. Reported also from Ohio and elsewhere, some of the specimens having been called *P. pallidus*. It has smaller scales than *P. caudicinus*.

PERDELICATUS. See *Tyromyces perdelicatus* Murrill in Western Polypores, p. 9.

PETERSII. *Trametes Petersii* Berk. & Curt. Grevillea 1: 66. 1872. Described from Alabama and not since collected. See "Southern Polypores," p. 61.

PSEUDOTSUGAE. See *Tyromyces Pseudotsugae* Murrill in Western Polypores, p. 9.

PUSILLUS. *Trametes pusillus* C. G. Lloyd, Myc. Notes 54: 774. f. 1165. 1918. Collected in Minnesota by Dr. S. M. Stocker. Type not seen.

"Pileus small, 1-1½ cm., dimidiate, white. Margin acute. Surface dull, faintly greyish, unzoned, very minutely pubescent. Pores white, small, round, rigid, with white mouths. Cystidia none. Spores cylindrical, hyaline, smooth, $3 \times 6 \mu$.

"When I first saw this collection I thought of *Fomes Ohiensis* (cf. *Fomes* Synopsis p. 218), but it did not look exactly right. The spores I found were entirely different. I do not know of any other species, excepting *Fomes Ohiensis* with which it can be confused. The pores are not in strata, hence these specimens are not *Fomes*, but the species may turn out to be a *Fomes*, the same as *Fomes Ohiensis*, which was thought at first to be a *Trametes*. The plant is quite close to a form of *Trametes sepium* we often find with little pilei, but its habits are different and its pores much smaller."

PUTEARIUS. *Fomes putearius* Weir, Jour. Agric. Research 2: 163. pl. 9. 1914. Described from the Northwest on coniferous wood, with a preference for larch. I have before me specimens from Weir which appear to match in every particular specimens collected by Bresadola on fir near Trient and labeled "*Fomes spongiosus* Pers. (= *Fomes tenuis* Karsten)." Compare *Boletus spongiosus* Pers. Syn. Fung. 543 and *Boletus resupinatus* Bolton, Hist. Fung. 165. pl. 165. It is interesting to have this species so well worked up by Mr. Weir for America.

"Sporophores hard, woody, very irregularly lobed, recurving, slightly concave to applanate, occasionally broadly spreading to typically resupinate. The resupinate sporophores are often a foot or more in length. Pileate forms 12

to 14 by 6 to 8 by 0.4 cm. The surface in young specimens is velvety or tomentose, later becoming slightly incrustated, but always more or less corky, zonate, much wrinkled and furrowed in old age, in color deep brown, becoming darker; margin lighter colored, undulate, tomentose, thin, with narrow sterile border when young, later becoming thickened, rounded, and recurved by the successive annual layers; context corky to woody, thick deep brown; tubes irregularly but distinctly stratified 2 to 3 mm. long each season, but much longer in resupinate forms, brown; mouths uniformly oval, varying in size, 4 to 8 to a millimeter, edges thick, ferruginous; spores colored, globose, smooth, 7 to 8 μ ; spines dark brown, slightly ventricose 13 to 25 by 6 μ ."

RIGIDUS. *Polyporus rigidus* Lév. Ann. Sci. Nat. III. 2: 189.

1844. It is claimed that this Javan species, which somewhat resembles *Rigidoporus surinamensis*, occurs in Missouri and Florida. I have not seen the American collections upon which this claim is based.

SENSIBILIS. See *Spongipellis sensibilis* Murrill in Western Polypores, p. 10. Closely related to *Spongipellis fragilis* (Fries) Murrill.

SETOSUS. *Trametes setosus* Weir, Jour. Agric. Research 2: 164. pl. 10. 1914. Described from Idaho on *Pinus monticola*, and said to be destructive to coniferous wood in the Northwest from Vancouver, B. C., to Montana. Compare small, poroid forms of *Porodaedalea Pini* (Thore) Murrill.

"Sporophores pileate or entirely resupinate, depending upon its position in the substratum. The resupinate forms have sharply defined sterile margins and are usually found on the underside of logs, where they may extend for a distance of a foot or more. The distinctly sessile pileate forms are usually free from each other, but may be connected by the resupinate portion, occasionally narrowed at the point of attachment, mostly thickened at the base, rarely applanate or conchate, averaging 1 by 2 by 2 cm. Surface minutely tomentose, becoming smooth or weathered in old specimens, zonate, rich dark brown, uneven; margin thick, of lighter color, entire, becoming slightly serrate in old age, slightly sterile; context ferruginous or fulvous, spongy to corky, slightly zonate, particularly in old specimens; tubes long, often filled with a grayish mycelium, 1 to 1.5 mm.; mouths small, mostly angular, occasionally labyrinth-like, 3 to 6 to a millimeter, edges thick, tomentose; spores hyaline, 4 to 5 by 3 μ . The character that distinguishes the species from all of its near relatives is the immense number of long dense brown setae lining the interior of the tubes. In no other species known to the writer is this character so distinctly pronounced. The longest spines measure 41.45 μ , the shortest about 22.16 μ , with an average of 30.46 μ . The nature and immense number of these setae may be determined by a study of Plate X, figure II."

SMARAGDINUS. *Polyporus smaragdinus* C. G. Lloyd, Myc. Notes 58: 818. f. 1365. 1919. Collected by Dr. J. F. Brenckle on a sycamore log in Arkansas. Type not seen.

"Pileus dimidiate, 1-2 inches thick. Surface dull, uneven, with thin, buff cuticle. Context white, hard when dry. Pores minute, 4-6 mm. deep, with pale greenish tissue and brown mouths. Cystidia none. Spores globose, hyaline, 6 μ . Conidial spores abundant, small, subglobose, 2-3 μ , hyaline.

"The colors are those of the dried specimen. I judge that of the pore mouths has changed in drying. The pale green pore tissue is an unusual feature. I do not recall it in any other species."

SPUMEUS. This species has several times been reported, but I have seen no American specimens that correspond with those I have from Europe.

SUBPENDULUS. *Tyromyces subpendulus* Atk. Ann. Myc. 6: 61. 1908. On hemlock; resembling *Porodisculus pendulus* in shape. Type not seen.

SUBSTIPITATUS. See *Tyromyces substipitatus* Murrill in Western Polypores, p. 9.

TEPHROLEUCUS. Reported from America, but I have seen no American specimens that correspond with European material.

TORULOSUS. *Fomes torulosus* Pers. Reported by Lloyd from Louisiana, growing on live oak. He says that *Fomes fuscopurpureus* Boudier, pl. 152, is the same thing and that the spores are hyaline. I have not seen the Louisiana specimens, unless they were some I determined for Edgerton as *Hapalopilus licnoides*. This species gets quite thick at times and appears to be perennial.

URSINUS. *Polyporus ursinus* C. G. Lloyd, Syn. Apus Pol. 319. f. 659, 660. 1915. Type not seen. Compare the description carefully with *Spongipellis fragilis* (Fries) Murrill.

"Pileus dimidiate (1 \times 5 \times 7 cm.), white, but turning reddish when bruised and on drying. Surface strongly scrupose, tomentose, with rigid, tufted hairs, which have the same color change as the flesh. Flesh white, soft when fresh, but drying firm and hard. Pores medium large, sinuate, white, discolored in drying. Spores narrow-piriform, tapering to the base, 2½ \times 8-10.

"This we collected growing on pine at Temagami, Ontario, August, 1907. We referred it, from the description, with which it agrees exactly, to *Polyporus Weinmanni* of Europe, but we find the type of the latter plant at Kew is quite different, being *Polyporus mollis*. We think Professor Peck has col-

lected the same plant (cfr. Rep. 31) and also referred it to *Polyporus Weinmanni*."

VARIIFORMIS. *Polyporus variiformis* Peck, Ann. Rep. N. Y. State Mus. 42: 26. 1889. This was referred by me to *Coriodelus serialis* (Fries) Murrill, but some authors claim that it is distinct. I must look at Peck's types again.

VARIUS. *Polyporus varius* (Pers.) Fries. *Polyporus calceolus* (Bull.) Murrill, Bull. Torrey Club 31: 41. 1904. Specimens collected in British Columbia by Macoun and at Clyde, New York, by O. F. Cook correspond very closely with specimens obtained by me in Sweden. In America, the species is rare and northern.

WASHINGTONENSIS. See *Coriolus washingtonensis* Murrill in Western Polypores, p. 4.

WEIRII. *Fomitiporia Weirii* Murrill, Mycologia 6: 93. pl. 122. 1914.

ZELLERI. *Polyporus Zelleri* Murrill, Western Polypores 13. 1915. Found at Seattle, Washington.

ZONATUS. *Coriolus zonatus* (Fries) Quél. When I examined numbers of fresh and dried Specimens of this common European species several years ago, I did not feel justified in admitting it to our flora. I have since seen specimens from Canada and New England which approach it very closely.

NEW YORK BOTANICAL GARDEN.